

CLAIMS

1. A mold clamping device comprising:

a stationary platen that supports a stationary mold;

5 a movable platen that supports a movable mold;

a plurality of tie bars with ends that are detachably connected to the stationary platen and other ends that extend through the movable platen;

mold opening and closing means that moves the movable platen toward and away from the stationary platen so that the movable mold opens from and closes on the stationary mold;

10 tie bar connecting means that detachably connects each of the plurality of tie bars to the movable platen by having a split nut engaged with an engagement portion formed in each of the tie bars; and

15 a mold clamping cylinder that is provided around a tie bar insertion through hole in the movable platen and propels the movable platen toward the stationary platen side, using the split nut in the tie bar connecting means as a reaction point, so as to generate a mold clamping force, wherein

20 the mold clamping cylinder includes a secondary piston that defines, out of two chambers in front and in rear defined by a primary piston that abuts against the split nut, the chamber positioned on the stationary platen side into a front chamber and a rear chamber, and

the secondary piston integrally operates with the primary piston at a time of a mold contact and a mold clamping, but makes a movement relative to the primary piston at a time of a mold release.

25 2. The mold clamping device according to claim 1, wherein

the mold opening and closing means stops the movable platen at a position, immediately before the movable mold comes in contact with the stationary mold.

3. A molding method using the mold clamping device according to claim 2, wherein

after the mold opening and closing means moves the movable platen toward the stationary platen side and stops the movable platen at the position, immediately before the movable mold comes in contact with the stationary mold, the split nut in the tie bar

5 connecting means is closed so that each of the plurality of tie bars is connected to the movable platen,

the movable platen is then propelled by an operation of the mold clamping cylinder so that the mold contact and the mold clamping are performed, and

10 when a predetermined period of cooling time has passed after completion of an injection process, a supply-discharge mode for pressure oil to and from the mold clamping cylinder is changed so that the mold release is performed with a piston stroke larger than a piston stroke used at the time of the mold contact and the mold clamping.